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(54) **TRIAXIAL BULKHEAD CONNECTOR**

TRIAXIALER BULKHEAD-VERBINDER

CONNECTEUR DE CLOISON TRIAXIAL

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Description

Field of the Invention

[0001] The present invention relates to bulkhead connectors, more specifically to bulkhead connectors for connecting to triaxial cables.

Background of the Invention

[0002] Connectors for use with electrically conductive triaxial transmission cables provide electrical connectivity with the center conductor of the cable as well as to coaxially arranged conductors within the cable. The center conductor of a triaxial cable is physically and electrically linked to the center conductor of the connector, and the connector can then be used with a mating bulkhead connector, such as might be found on a camera or other piece of telecommunications or entertainment broadcast equipment. U.S. Pat. Nos. 5,967,852, 6,109,963 and 6,575,786 to ADC Telecommunications, Inc., concern triaxial cable connectors for use in-line. Mounting panels for connectors of this type are also known, as shown in U.S. Pat. Nos. 6,146,192 and 6,231,380. Continued development in this area is desired.

[0003] US 5,417,598, which is considered to represent the most relevant state of the art, discloses a bulkhead connector for connecting to a transmission line comprising: a rear portion mountable within an opening in a bulkhead including threads extending on a side of the bulkhead; a front connector body with first mating threads adapted to be threadably attached to the thread of the rear portion; a front shell assembly; an insulator adapted to fit within the front connector body; the front shell assembly including a center conductor mounted within a central axial opening of an insulator; wherein the front shell insulator is mounted within a central opening of the front shell assembly.

Summary of the Invention

[0004] A bulkhead connector for connecting to a transmission line comprising a rear portion mounted within an opening in a bulkhead with a first end including first and second threads on a first side of the bulkhead and a second end extending through the opening to a second opposing side of the bulkhead. A front connector body and a front shell assembly are threadably attached to the rear portion with an insulator sleeve positioned between them. The front shell assembly includes a front shell with threads for attaching to the rear portion and a center conductor mounted within an insulator. The insulator is mounted within a central opening of the front shell and electrically isolates the center conductor from the front shell. The second end of the rear portion including threads may be received within the opening in the bulkhead.

Brief Description of the Drawings

[0005] The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate several aspects of the present invention and together with the description, serve to explain the principles of the invention. A brief description of the drawings is as follows:

- 10 FIG. 1 is a perspective view of a triaxial bulkhead connector in accordance with the present invention mounted to a bulkhead.
- FIG. 1A is a side view of a camera with the triaxial connector of FIG. 1 mounted to the camera and hidden lines showing leads connected to the connector within the camera.
- FIG. 2 is a perspective view of the bulkhead connector of FIG. 1, removed from the bulkhead.
- FIG. 3 is a partially exploded perspective view of the bulkhead connector of FIG. 2.
- FIG. 4 is a side view of the bulkhead connector of FIG. 2.
- FIG. 5 is a cross-sectional view of the bulkhead connector of FIG. 4, taken along line 1-1.
- 25 FIG. 6 is a perspective view of a second embodiment of a bulkhead connector in accordance with the present invention.
- FIG. 7 is a partially exploded perspective view of the bulkhead connector of FIG. 6.
- 30 FIG. 8 is a side view of the bulkhead connector of FIG. 6.
- FIG. 9 is a front perspective view of a rear portion of a triaxial bulkhead connector according to the present invention.
- 35 FIG. 10 is a rear perspective view of the rear portion of the bulkhead connector of FIG. 9.
- FIG. 11 is an exploded front perspective view of the rear portion of the bulkhead connector of FIG. 9.
- FIG. 12 is a second embodiment of a rear portion of a triaxial bulkhead connector according to the present invention, mounted to an opening in a bulkhead.
- 40 FIG. 13 is an exploded front perspective view of the rear portion of the triaxial connector of FIG. 12.
- 45 FIG. 14 is a front perspective view of a third embodiment of a triaxial bulkhead connector according to the present invention.
- FIG. 15 is a partially exploded front perspective view of the bulkhead connector of FIG. 14.
- FIG. 16 is a side view of the bulkhead connector of FIG. 14.
- FIG. 17 is a fourth embodiment of a triaxial bulkhead connector according to the present invention.
- FIG. 18 is a partially exploded front perspective view of the bulkhead connector of FIG. 17.
- 50 FIG. 19 is a side view of the bulkhead connector of FIG. 17.
- FIG. 20 is a front perspective view of a third embodiment

iment of a rear portion of a triaxial bulkhead connector according to the present invention.

FIG. 21 is an exploded front perspective view of the rear portion of the triaxial connector of FIG. 20.

FIG. 22 is an exploded front perspective view of a front shell assembly according to the present invention.

FIG. 23 is a front end view of the front shell assembly of FIG. 22.

FIG. 24 is a side cross-sectional view of the front shell assembly of FIG. 22, taken along line 2-2 of FIG. 23.

Detailed Description of the Preferred Embodiments

[0006] Reference will now be made in detail to exemplary aspects of the present invention which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or similar parts.

[0007] Connectors for connecting two lengths of triaxial cables are known and are described in detail in U.S. Pat. Nos. 5,967,852, 6,109,963 and 6,575,786. Various adapters, yokes, mounting plates and bulkheads for cable connectors are disclosed in U.S. Pat. No. 6,575,786, noted above, and in U.S. Pat. Nos. 6,146,192 and 6,231,380. However, these prior systems did not permit the direct connection to a piece of equipment, such as a camera, without the equipment including a pigtail of cable to which a mating connector is attached. Such an arrangement may be cumbersome and more prone to damage than a bulkhead mounted connector, such as connector 10 shown in FIG. 1.

[0008] Connector 10 is adapted to mount to a bulkhead 12. In the preferred embodiment, connector 10 fits in an opening 13 in bulkhead 12 (shown in FIG 13, below). Bulkhead 12 can be the case of a camera 2, such as shown in FIG. 1A, or some other piece of broadcast transmission equipment. Connector 10 differs from the triaxial connectors described in the referenced U.S. patents in that it is mounted directly to bulkhead 12 without yokes or adapters. Also, connector 10 is not adapted to terminate a jacketed triaxial cable. As will be shown in more detail below, connector 10 is adapted to mate with a triaxial connector on a first side 60 of bulkhead 12 (outside the camera or other equipment) while connecting with one or more electrical leads 4 or other conductors on a second opposite side 62 of bulkhead 12 (inside camera 2 or other equipment).

[0009] In the prior art systems, disclosed in the patents cited above, kits were provided to permit connectors terminating jacketed cables to be changed to mate with the style and gender of other cables or broadcast transmission equipment. This required that the connectors on the cables be of the type described in these patents. However, if the cables were not terminated with such modifiable connectors, gender or style modification to connect to a camera with a bulkhead mounted adapter was not

possible without cutting off the existing connector and re-terminating the cable. Connector 10 permits the modification of a bulkhead mounted connector to mate with the style and gender of a non-modifiable cable mounted connector. This will permit greater flexibility in the use of cameras and other equipment with existing cable infrastructure, such as might be found at a sporting venue or other broadcast facility.

[0010] Referring now to FIGS. 2 and 3, connector 10 is a male or plug connector for mating with a female or jack cable mounted triaxial connector. Connector 10 includes a connector body or rear portion 14, which is mounted to bulkhead 12, a front shell assembly 20 which is threadably mounted to rear portion 14 at second threads 22. A front connector body 16 is threadably mounted to rear portion 14 at first threads 24 and is positioned about front shell assembly 20. Mounted between front connector body 16 and front shell assembly 20 to physically and electrically isolate the two from each other is insulator 18. Front connector body 16 defines a first end 26 and includes a plurality of releasable locking members positioned about a circumference. Locking members 28 permit the secure yet releasable connection with a mating connector.

[0011] Front connector body 16, insulator 18 and front shell assembly 20 comprise a kit 30 for adapting rear portion 14 to mate with a variety of different style or genders of triaxial connectors. Four embodiments of such kits are shown in the FIGS. corresponding to two distinct styles or formats of connectors and two genders within each style. The present invention is not limited to these four embodiments but may be adapted for use with other styles and gender definitions. Different kits 30 are described in further detail in previously cited U.S. Pat. Nos. 5,967,852, 6,109,963 and 6,575,786.

[0012] Referring now to FIGS. 4 and 5, connector 10 includes a center contact mounting stud 34 which is electrically connected with a center conductor pin 36 of front shell assembly 20. When first end 26 is mated with a mating triaxial cable connector, center conductor pin 36 is electrically connected with the center conductor of the cable. Mounting stud 34 is adapted for connection with a lead within the piece of broadcast equipment of which bulkhead 12 is a part. Connector 10 also includes first coaxial conductor mounting studs 32 which are electrically connected to a front shell 40. When first end 26 is mated with a mating triaxial cable connector, front shell 40 is electrically connected to the first coaxial conductor of the cable. Mounting studs 32 are adapted for connection with a lead or leads within the piece of broadcast equipment of which bulkhead 12 is a part.

[0013] Front shell assembly 20 includes front shell 40, center conductor pin 36 and an insulator 38 positioned between and electrically and physically isolating shell 40 and pin 36. Pin 36 is mounted within a central axial opening in insulator 38 and insulator 38 is held within a central axial opening of front shell 40. Front shell 40 is threadably received by second threads 22 to mount front shell as-

sembly to rear portion 14. Front shell 40 includes a plurality of finger 41 (shown in FIG. 3). Center conductor pin 36 is interchangeable with a center conductor jack while front shell 40 is interchangeable with a front shell defining a solid front end without fingers.

[0014] Referring now to FIGS. 6 to 8, a bulkhead connector 110 is shown. Connector 110 conforms to the same format as connector 10 but is a female or jack connector. Rear portion 14 is the same for both connectors, as indeed it is for all styles and genders of bulkhead triaxial connectors according to the present invention. A kit 130 includes a front shell assembly 120 with a front shell 140 and a center conductor jack 136. Center conductor jack 136 is held within a central axial opening of insulator 38 and insulator 38 is held within a central axial opening of front shell 140. Front shell 140 defines a solid front end 141.

[0015] Kit 130 also includes a front connector body 116 and an insulator 118 positioned between front shell assembly 120 and front connector body 116. Front shell assembly 120 is threadably received by second threads 22 and front connector body 116 is threadably received by first threads 24. Center contact mounting stud 34 is electrically connected to center conductor jack 136 and first coaxial mounting studs 32 are electrically connected to front shell 140. Front connector body 116 defines a first end 126 for receiving a mating triaxial cable connector.

[0016] FIGS. 9 to 12 show a second embodiment of a rear portion 114 according to the present invention. Rear portion 114 includes an outer shell 48 and an inner shell 50. Outer shell 48 includes bulkhead mounting threads 42 to facilitate mounting rear portion 114 to an opening 13 (shown in FIG. 13) in bulkhead 12. Opening 13 may be threaded to receive threads 42 or an insert may be provided within opening 13 to receive threads 42. Alternatively, lock nuts may be threaded onto threads 42 to secure rear portion 114 to bulkhead 12. Outer shell 48 also includes first threads 24 for threadably receiving a front connector body, such as front connector body 16 or 116.

[0017] Outer shell 48 includes a central opening 49 within which is mounted an insulator 52. Insulator 52 includes a central opening 53 within which is mounted inner shell 50 so that the inner and outer shells are electrically and physically isolated. Inner shell 50 includes second threads 22 for threadably receiving front shell assembly 20. Inner shell 50 also defines a central opening 51 within which is mounted a center conductor insulator 44. Center conductor insulator 44 includes a central opening 45 within which is mounted a center conductor shaft 54. Center conductor shaft 54 includes center conductor mounting stud 34 on a first end and a center conductor contact 56 on a second end. When a front shell assembly 20 or 120 is threaded onto second threads 22, center conductor contact 56 engages center conductor pin 36 or jack 136 to electrically connect with mounting stud 34.

[0018] First coaxial conductor mounting studs 32 are

mounted to a ring 46 which is positioned about and electrically connected to inner housing 50. Inner housing 50 and outer housing 48 are made of an electrically conductive material. When a front shell assembly 20 or 120 is threadably received by second threads 22, outer shell 40 or 140 is electrically connected with first coaxial connector mounting studs 32 by inner housing 50.

[0019] Outer shell 48 has a rear surface 82 adjacent threads 42 and defining a planar rear face. Insulator 52 includes a rear end 76 which when inserted within opening 49 is essentially flush with rear surface 82 of outer shell 48 and defines a rear face of rear portion 114. Mounting studs 32 and 34 extend beyond rear surface 82 and rear end 76 so that they are accessible for attaching to electrical leads, such as leads 4 shown in FIG. 1A inside camera 2. As mounting studs 32 and 34 may be positioned within a case and thereby sheltered from most environmental hazards or impacts and do not need to be covered by additional shields or housings. Since studs 32 and 34 are adapted for directly connecting to leads, no provision is made within rear portions 14, 114 and 214 for crimping to conductors within a jacketed triaxial cable.

[0020] Inner housing 50 also include a rear extension 80 which extends beyond rear surface 82 and rear end 76 between mounting studs 32 and 34. Along opposing sides of outer shell 48 are a pair of flats 78. Flats 78 permit better gripping of rear portion 114 when mounting rear portion 114 to a bulkhead. If the opening in the bulkhead is threaded to receive threads 42, an installer's fingers or a wrench may be used to grasp flats 78 to aid installation. Flats 78 also improve a user's grip of outer shell 48 when assembling the various components included in rear portion 114.

[0021] FIG. 13 shows a third embodiment of a rear portion 214 according to the present invention. Many of the components of rear housing 214 are common with rear housing 114 described above. An inner shell 150 includes first coaxial studs 32 integral with the housing and studs 32 define the rearmost extension of inner shell 150. A center conductor contact 154 is mounted between a pair of insulator halves 144 and is positioned within opening 51 of inner housing 150. In other respects, rear portion 214 and 114 engage kit 30 in the same fashion and are received by bulkhead 12 in the same fashion.

[0022] Rear portion 214 also includes a rear face defined by rear surface 82 of outer shell 48 and rear end 76 of insulator 52. Inner shell 150 does not include a rear extension 80 extending beyond this rear face. The rear most portion of inner shell 152 are mounting studs 32 and these along with mounting stud 34 extend beyond the rear face.

[0023] Referring now to FIGS. 14 to 16, a third embodiment of a triaxial bulkhead connector 210 including rear portion 14 and a kit 230 with a front shell assembly 220, insulator 218 and a front connector body 216. Front connector body 216 defines a first end 226 for receiving a mating triaxial cable connector. Front shell assembly 220 includes center conductor pin 36 within insulator 38 (not

shown) within a front shell 140 defining a solid front end 141. Connector 210 conforms to a different format and gender definition from the style and genders of connector 10 and 110.

[0024] Referring now to FIGS. 17 to 19, a fourth embodiment of a triaxial bulkhead connector 310 including rear portion 14 and a kit 330 with a front shell assembly 320, insulator 318 and a front connector body 316. Front connector body 316 defines a first end 326 for receiving a mating triaxial cable connector. Front shell assembly 320 includes center conductor jack 136 within insulator 38 (not shown) within a front shell 40 defining a plurality of fingers 41. Connector 310 conforms to the same format and gender definition as connector 210.

[0025] Referring now to FIGS. 20 and 21 and also to FIG. 4, further detail of rear portion 14 is shown. Rear portion 14 includes an outer shell 148 which includes threads 42 for mounting rear portion 14 within opening 13 to bulkhead 12 and also includes an integral flange 58 which rests against first side 60 of bulkhead 12. If opening 13 includes threads corresponding to threads 42, rear portion 14 can be threaded into opening 13 until flange 58 rests against first side 60. Alternatively, if opening 13 is not threaded, threads 42 of rear portion 14 can be inserted through opening 13 until flange 58 rests against first side 60. Then, a threaded nut, lock ring or other similar fastener threaded fastener can be threaded onto threads 42 until flush against second face 62. Outer shell 148 also includes opposing flats 78 and rear surface 82, as described above with regard to rear portions 114 and 214.

[0026] Front shell assembly 220 is shown in further detail in FIGS. 22 to 24. Front shell assembly 220 includes front shell 140 with center conductor pin 36. As shown in the various embodiments above, front shells 40 and 140 can be combined with center conductor pin 36 or center conductor jack 136 to conform to the desired style or gender definition. As other styles and gender formats are defined, front shell assembly 20, 120, 220, 320 can be adapted as needed within the scope of the present invention. Insulator 38 includes a central opening 39 within which center conductor pin 36 is received. Front shell 140 includes a central opening 64 within which insulator 38 is received. Central opening 64 includes a portion 66 for holding a shoulder 67 of insulator 38 and a threaded portion 68 which is threadably received by second threads 22 of rear portions 14 or 114. A rear opening 70 is provided into central opening 39 of insulator 38 which permits center conductor contact 56 of rear portion to physically and electrically connector with center conductor pin 36 when front shell assembly is mounted to rear portion 14.

[0027] Center conductor pin 36 extends from a first end 74 of insulator 38 within front shell 140 proximate front end 141. A second opposing end 72 of insulator 38, including opening 70, extends outside of central opening 64 of front shell 140. For each of the alternative embodiments shown for a triaxial bulkhead connector according

to the present invention, insulator 38 is used within central opening 64 of either front shell 40 or 140. Insulator 38 also holds center conductor pin 36 or jack 136 is the same relative position within central opening 39, both proximate fingers 41 and front end 141 and with regard to opening 70.

[0028] The above specification, examples and data provide a complete description of the manufacture and use of the invention. Since many embodiments of the invention can be made without departing from the scope of the invention, the invention resides in the claims hereinafter appended.

15 Claims

1. A bulkhead connector (10) for connecting to a transmission line comprising:

a rear portion (14) mountable within an opening (13) in a bulkhead (12) with a first end including first and second threads (24, 22) on a first side of the bulkhead (12) and a second end extending through the opening to a second opposing side of the bulkhead (12);

a front connector body (16) with first mating threads adapted to be threadably attached to the first threads (24) of the rear portion (14);

a front shell assembly (20) with second mating threads adapted to be threadably attached to the second threads (22) of the rear portion (14); an insulator (18) adapted to fit within the front connector body (16) and electrically isolate the front connector body (16) from the front shell assembly (20);

the front shell assembly (20) including a front shell (40) including threads for attaching to the rear portion (14) and a center conductor (36) mounted within a central axial opening of an insulator (38);

wherein the front shell insulator (38) is mounted within a central opening of the front shell (40) and electrically isolates the center conductor (36) from the front shell (40); and

the second end of the rear portion (14) including threads (42) which are received within the opening (13) of the bulkhead (12).

2. The bulkhead connector of claim 1, wherein the second end includes means (32, 34) for electrically connecting to electrical leads on the second side of the bulkhead (12) and the means (32, 34) extends beyond a rear face (76) of the rear portion (14).

3. The bulkhead connector of claim 2, wherein the means for electrically connecting to electrical leads includes wire mount studs (32) electrically connected to the center conductor (36) and the front shell

- (20).
4. The bulkhead connector of claim 3, wherein the wire mount studs (32) define the rear-most extension of the rear portion (14). 5
 5. The bulkhead connector of claim 1, wherein the second end of the rear portion (14) includes a pair of opposing flats (78) adjacent the threads (42). 10
 6. The bulkhead connector of claim 1, wherein the second end of the rear portion (14) includes a ledge (58) adjacent the threads (42) to rest against the first side of the bulkhead (12). 15
 7. The bulkhead connector of claim 7, wherein the opening (13) in the bulkhead (12) is threaded to receive the threads (42) of the second end of the rear portion (14). 20
 8. A bulkhead connector system for connecting to a transmission line comprising:
 - a connector (10) according to any of the preceding claims; and
 - a bulkhead (12) including an opening (13); wherein the rear portion (14) of the connector (10) is mounted within the opening (13) of the bulkhead (12) with the first end of the rear portion (14) on a first side of the bulkhead (12) and the second end of the rear portion (14) on an opposing second side of the bulkhead (12). 25
 9. The system of claim 8, wherein the second end of the rear portion (14) includes a ledge (58) adjacent the threads (42) to rest against the first side of the bulkhead (12). 30
 10. The system of claim 9, wherein the opening (13) in the bulkhead (12) is threaded to receive the threads (42) of the second end of the rear portion (14). 35
 11. A connector (10) according to any of the preceding claims, wherein the rear portion (14) comprises:
 - an outer shell (48) with a central opening (49) and a rear surface (82), wherein the mounting threads (42) that are received within the opening (13) of the bulkhead (12) are adjacent the rear surface (82), the outer shell (48) also including the first threads (24) that are adapted to receive the front connector body (16);
 - an insulator (52) positioned within the central opening (49) of the outer shell (48) having a rear end (76) which cooperates with the rear surface (82) of the outer shell (48) to define a rear face (76);
 - an inner shell (50) positioned within the central opening (53) of the insulator (52), the inner shell (50) having the second threads (22) adjacent the first threads (24), the second threads (22) adapted to receive the front shell assembly (20), the inner shell (50) including a wire mounting stud (32) opposite the second threads (22), the wire mounting stud (32) extending beyond the rear face (76);
 - the inner shell (50) further including a central opening (51) within which is mounted a center conductor shaft (54) electrically isolated from the inner shell (50) by a center conductor insulator (44);
 - the center conductor (54) including a first end with a contact adapted to engage the center conductor (36) of the front shell assembly (20) and a second end with a mounting stud (34) which extends beyond the rear face (76). 40
 12. The connector of claim 11, wherein the wire mounting studs (32) of the inner shell (50) are part of a ring (46) which is mounted about a rear extension of the inner shell (50). 45
 13. The connector of claim 12, wherein the rear extension of the inner shell (50) extends beyond the rear face (76). 50
 14. The connector of claim 11, wherein the wire mounting studs (32) of the inner shell (50) define the rear-most extension of the inner shell (50). 55
 15. The connector of claim 11, wherein the outer shell (48) includes a ledge (58) adjacent the mounting threads (42) opposite the rear face (76).
 16. The connector of claim 11, wherein the outer shell (48) includes a pair of opposing flats (78) between the rear face (76) and the first threads (24).

Patentansprüche

1. Schottverbinder (10) zum Anschluss an eine Übertragungsleitung, Folgendes aufweisend:
 - einen hinteren Bereich (14), der in einer Öffnung (13) in einer Trennwand (12) angebracht werden kann, mit einem ersten Ende, das erste und zweite Gewindegänge (24, 22) auf einer ersten Seite der Trennwand (12) aufweist, und einem zweiten Ende, das sich durch die Öffnung zu einer zweiten, entgegengesetzten Seite der Trennwand (12) erstreckt;
 - einen vorderen Verbinderkörper (16) mit ersten passenden Gewindegängen, die dazu ausgelegt sind, mit den ersten Gewindegängen (24) des hinteren Bereiches (14) verschraubt zu wer-

- den;
eine vordere Hülsenbaugruppe (20) mit zweiten passenden Gewindegängen, die dazu ausgelegt sind, mit den zweiten Gewindegängen (22) des hinteren Bereiches (14) verschraubt zu werden;
ein Isolierstück (18), das dazu ausgelegt ist, in den vorderen Verbinderkörper (16) eingepasst zu werden und den vorderen Verbinderkörper (16) elektrisch von der vorderen Hülsenbaugruppe (20) zu isolieren;
wobei die vordere Hülsenbaugruppe (20) eine vordere Hülse (40) aufweist, die Gewindegänge zum Anschrauben am hinteren Bereich (14) und einen in einer zentralen axialen Öffnung eines Isolierstücks (38) angebrachten Mittelleiter (36) aufweist.
wobei das vordere Hülsenisolierstück (38) in einer zentralen Öffnung der vorderen Hülse (40) angebracht ist und den Mittelleiter (36) elektrisch von der vorderen Hülse (40) isoliert; und
wobei das zweite Ende des hinteren Bereiches (14) Gewindegänge (42) aufweist, die in der Öffnung (13) der Trennwand (12) aufgenommen sind.
2. Schottverbinder nach Anspruch 1, wobei das zweite Ende eine Einrichtung (32, 34) zum elektrischen Anschluss an elektrische Leitungen auf der zweiten Seite der Trennwand (12) aufweist, und sich die Einrichtung (32, 34) über eine Rückseite (76) des hinteren Bereiches (14) hinaus erstreckt.
3. Schottverbinder nach Anspruch 2, wobei die Einrichtung zum elektrischen Anschluss an elektrische Leitungen Drahtmontageansätze (32) aufweist, die elektrisch an den Mittelleiter (36) und die vordere Hülse (20) angeschlossen sind.
4. Schottverbinder nach Anspruch 3, wobei die Drahtmontageansätze (32) die hinterste Verlängerung des hinteren Bereiches (14) bilden.
5. Schottverbinder nach Anspruch 1, wobei das zweite Ende des hinteren Bereiches (14) angrenzend an die Gewindegänge (42) ein Paar entgegengesetzter Abflachungen (78) aufweist.
6. Schottverbinder nach Anspruch 1, wobei das zweite Ende des hinteren Bereiches (14) angrenzend an die Gewindegänge (42) einen Vorsprung (58) zur Anlage an der ersten Seite der Trennwand (12) aufweist.
7. Schottverbinder nach Anspruch 6, wobei die Öffnung (13) in der Trennwand (12) mit einem Gewinde versehen ist, um die Gewindegänge (42) des zweiten Endes des hinteren Bereiches (14) aufzunehmen.
8. Schottverbindersystem zum Anschluss an eine Übertragungsleitung, Folgendes aufweisend:
einen Verbinder (10) nach einem der vorhergehenden Ansprüche; und
eine Trennwand (12), die eine Öffnung (13) aufweist;
wobei der hintere Bereich (14) des Verbinders (10) in der Öffnung (13) der Trennwand (12) mit dem ersten Ende des hinteren Bereiches (14) auf einer ersten Seite der Trennwand (12) und dem zweiten Ende des hinteren Bereiches (14) auf einer entgegengesetzten, zweiten Seite der Trennwand (12) angebracht ist.
9. System nach Anspruch 8, wobei das zweite Ende des hinteren Bereiches (14) angrenzend an die Gewindegänge (42) einen Vorsprung (58) zur Anlage an der ersten Seite der Trennwand (12) aufweist.
10. System nach Anspruch 9, wobei die Öffnung (13) in der Trennwand (12) mit einem Gewinde versehen ist, um die Gewindegänge (42) des zweiten Endes des hinteren Bereiches (14) aufzunehmen.
11. Verbinder (10) nach einem der vorhergehenden Ansprüche, wobei der hintere Bereich (14) aufweist:
eine äußere Hülse (48) mit einer zentralen Öffnung (49) und einer hinteren Fläche (82), wobei die Montagegewindegänge (42), die in der Öffnung (13) der Trennwand (12) aufgenommen sind, sich angrenzend an die hintere Fläche (82) befinden, und wobei die äußere Hülse (48) auch die ersten Gewindegänge (24) aufweist, die zur Aufnahme des vorderen Verbinderkörpers (16) ausgelegt sind;
ein in der zentralen Öffnung (49) der äußeren Hülse (48) angeordnetes Isolierstück (52) mit einem hinteren Ende (76), das mit der hinteren Fläche (82) der äußeren Hülse (48) zusammenwirkt, um eine Rückseite (76) zu bilden;
eine innere Hülse (50), die in der zentralen Öffnung (53) des Isolierstücks (52) angeordnet ist, wobei die innere Hülse (50) die zweiten Gewindegänge (22) angrenzend an die erste Gewindegänge (24) hat, wobei die zweiten Gewindegänge (22) dazu ausgelegt sind, die vordere Hülsenbaugruppe (20) aufzunehmen, wobei die innere Hülse (50) den zweiten Gewindegängen (22) entgegengesetzt einen Drahtmontageansatz (32) aufweist, wobei sich der Drahtmontageansatz (32) über die Rückseite (76) hinaus erstreckt;
wobei die innere Hülse (50) darüber hinaus eine zentrale Öffnung (51) aufweist, in der ein von

der inneren Hülse (50) durch ein Mittelleiterisolistück (44) elektrisch isolierter Mittelleiterschafft (54) angebracht ist;
wobei der Mittelleiter (54) ein erstes Ende mit einem Kontakt, der dazu ausgelegt ist, den Mit-
telleiter (36) der vorderen Hülsebaugruppe
(20) in Eingriff zu nehmen, und ein zweites Ende
mit einem Montageansatz (34) aufweist, der
sich über die Rückseite (76) hinaus erstreckt.

12. Verbinder nach Anspruch 11, wobei die Montageansätze (32) der inneren Hülse (50) Teil eines Rings (46) sind, der um eine hintere Verlängerung der inneren Hülse (50) herum angebracht ist.

13. Verbinder nach Anspruch 12, wobei sich die hintere Verlängerung der inneren Hülse (50) über die Rückseite (76) hinaus erstreckt.

14. Verbinder nach Anspruch 11, wobei die Drahtmontageansätze (32) der inneren Hülse (50) die hinterste Verlängerung der inneren Hülse (50) bilden.

15. Verbinder nach Anspruch 11, wobei die äußere Hülse (48) angrenzend an die Montagegewindgänge (42) der Rückseite (76) entgegengesetzt einen Vorsprung (58) aufweist.

16. Verbinder nach Anspruch 11, wobei die äußere Hülse (48) zwischen der Rückseite (76) und den ersten Gewindgängen (24) ein Paar entgegengesetzter Abflachungen (78) aufweist.

Revendications

1. Connecteur de cloison (10) pour connecter une ligne de transmission comprenant :

une partie arrière (14) pouvant être montée dans une ouverture (13) d'une cloison (12) avec une première extrémité comprenant des premier et second filets (24, 22) sur un premier côté de la cloison (12) et une seconde extrémité s'étendant à travers l'ouverture vers un second côté opposé de la cloison (12) ;

un corps de connecteur avant (16) avec des premiers filets d'accouplement adaptés pour pouvoir être fixés de manière vissée aux premiers filets (24) de la partie arrière (14) ;

un ensemble formant douille avant (20) avec des seconds filets d'accouplement adaptés pour être fixés de manière vissée sur les seconds filets (22) de la partie arrière (14) ;

un isolant (18) adapté pour loger dans le corps de connecteur avant (16) et isoler électriquement le corps de connecteur avant (16) de l'ensemble formant douille avant (20) ;

l'ensemble formant douille avant (20) incluant une douille avant (40) comprenant des filets pour une fixation à la partie arrière (14) et un conducteur central (36) monté dans une ouverture axiale centrale d'un isolant (3 8) ;

où l'isolant de douille avant (38) est monté dans une ouverture centrale de la douille avant (40) et isole électriquement le conducteur central (36) de la douille avant (40) ; et

la seconde extrémité de la partie arrière (14) comprenant des filets (42) qui sont accueillis dans l'ouverture (13) de la cloison (12).

2. Connecteur de cloison selon la revendication 1, où la seconde extrémité comprend un moyen (32, 34) de connexion électrique à des broches électriques présentes sur le second côté de la cloison (12) et le moyen (32, 34) s'étend au-delà d'une face arrière (76) de la partie arrière (14).

3. Connecteur de cloison selon la revendication 2, où le moyen de connexion électrique à des broches électriques comprend des goujons de montage de câble (32) électriquement connectés au conducteur central (36) et à la douille avant (20).

4. Connecteur de cloison selon la revendication 3, où les goujons de montage de câble (32) définissent l'extension la plus en arrière de la partie arrière (14).

5. Connecteur de cloison selon la revendication 1, où la seconde extrémité de la partie arrière (14) comprend une paire de méplats (78) opposés adjacents aux filets (42).

6. Connecteur de cloison selon la revendication 1, où la seconde extrémité de la partie arrière (14) comprend une pièce d'appui (58) adjacente aux filets (42) destinée à reposer contre le premier côté de la cloison (12).

7. Connecteur de cloison selon la revendication 1, où l'ouverture (13) dans la cloison (12) est filetée pour recevoir les filets (42) de la seconde extrémité de la partie arrière (14).

8. Système de connecteur de cloison pour une connexion à une ligne de transmission comprenant :

un connecteur (10) selon l'une quelconque des revendications précédentes ; et

une cloison (12) comprenant une ouverture (13); où la partie arrière (14) du connecteur (10) est montée dans l'ouverture (13) de la cloison (12) avec la première extrémité de la partie arrière (14) sur un premier côté de la cloison (12) et la seconde extrémité de la partie arrière (14) sur un second côté opposé de la cloison (12).

9. Système selon la revendication 8, où la seconde extrémité de la partie arrière (14) comprend une pièce d'appui (58) adjacente aux filets (42) destinée à reposer contre le premier côté de la cloison (12).

10. Système selon la revendication 9, où l'ouverture (13) dans la cloison (12) est filetée pour recevoir les filets (42) de la seconde extrémité de la partie arrière (14).

11. Connecteur (10) selon l'une quelconque des revendications précédentes, où la partie arrière (14) comprend :

une douille extérieure (48) avec une ouverture centrale (49) et une surface arrière (82), où les filets de montage (42) qui sont accueillis dans l'ouverture (13) de la cloison (12) sont adjacents à la surface arrière (82), la douille extérieure (48) comprenant également les premiers filets (24) qui sont adaptés pour accueillir le corps de connecteur avant (16) ;

un isolant (52) agencé dans l'ouverture centrale (49) de la douille extérieure (48), et dont une extrémité arrière (76) coopère avec la surface arrière (82) de la douille extérieure (48) pour définir une face arrière (76) ;

une douille intérieure (50) agencée dans l'ouverture centrale (53) de l'isolant (52), la douille intérieure (50) présentant les seconds filets (22) adjacents aux premiers filets (24), les seconds filets (22) étant adaptés pour accueillir l'ensemble formant douille avant (20), la douille intérieure (50) comprenant un goujon de montage de câble (32) opposé aux seconds filets (22), le goujon de montage de câble (32) s'étendant au-delà de la face arrière (76) ;

la douille intérieure (50) comprenant en outre une ouverture centrale (51) dans laquelle est montée une tige (54) de conducteur central isolée électriquement de la douille intérieure (50) par un isolant (44) de conducteur central ;

le conducteur central (54) comprenant une première extrémité avec un contact adapté pour venir en prise avec le conducteur central (36) de l'ensemble formant douille avant (20) et une seconde extrémité avec un goujon de montage (34) qui s'étend au-delà de la face arrière (76).

12. Connecteur selon la revendication 11, où les goujons de montage de câble (32) de la douille intérieure (50) font partie d'une bague (46) qui est montée autour d'une extension arrière de la douille intérieure (50).

13. Connecteur selon la revendication 12, où l'extension arrière de la douille intérieure (32) s'étend au-delà de la face arrière (76).

14. Connecteur selon la revendication 11, où les goujons

de montage de câble (32) de la douille intérieure (50) définissent l'extension la plus arrière de la douille intérieure (50).

15. Connecteur selon la revendication 11, où la douille extérieure (48) comprend une pièce d'appui (58) adjacente aux filets de montage (42) du côté opposé à la face arrière (76).

16. Connecteur selon la revendication 11, où la douille extérieure (48) comprend une paire de méplats (78) opposées entre la face arrière (76) et les premiers filets (24).

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FIG.1

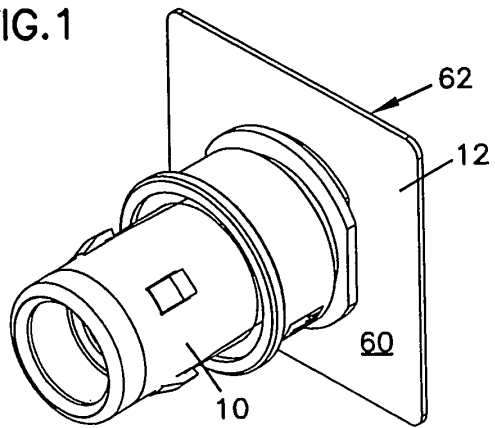


FIG.1A

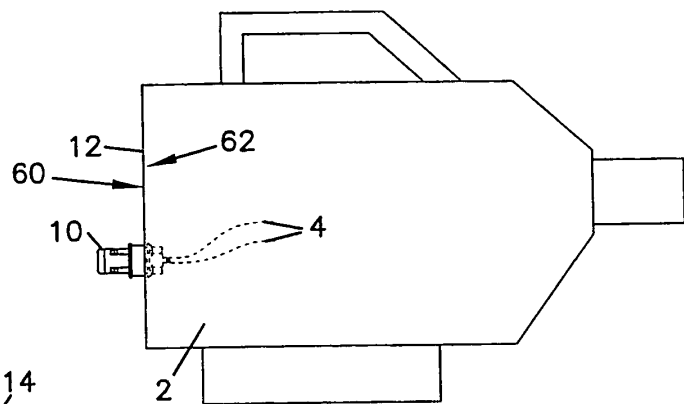


FIG.2

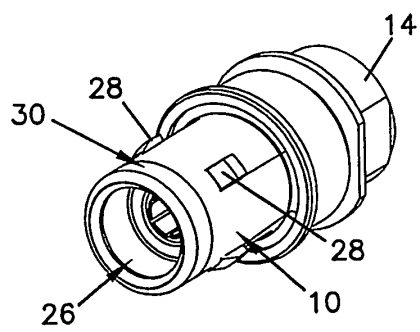


FIG.3

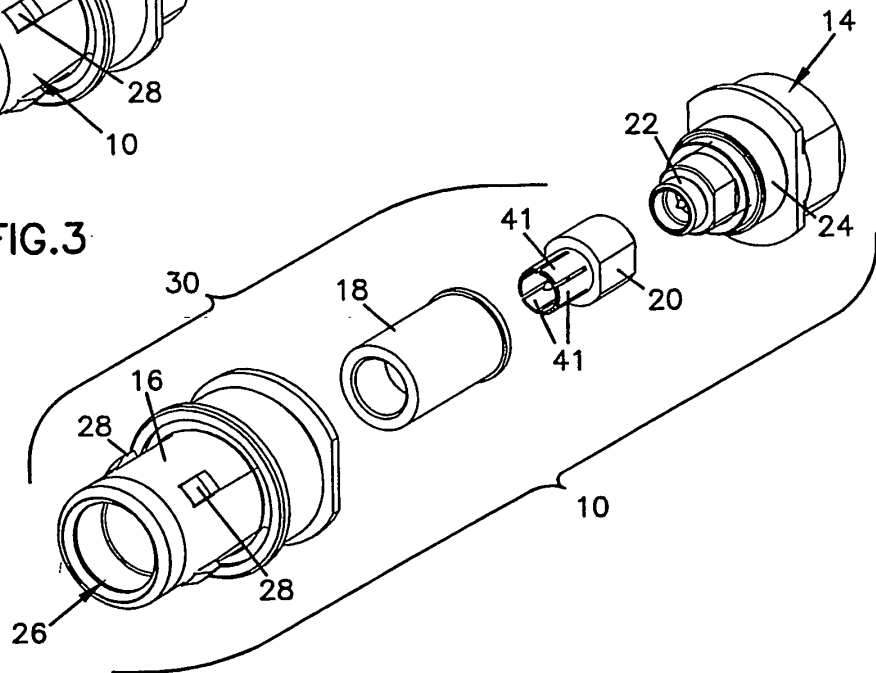


FIG.4

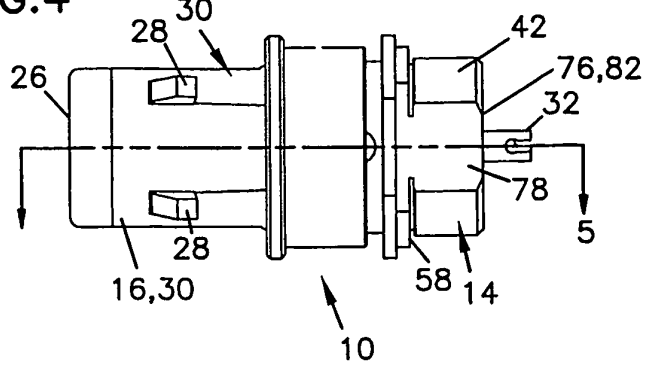


FIG.5

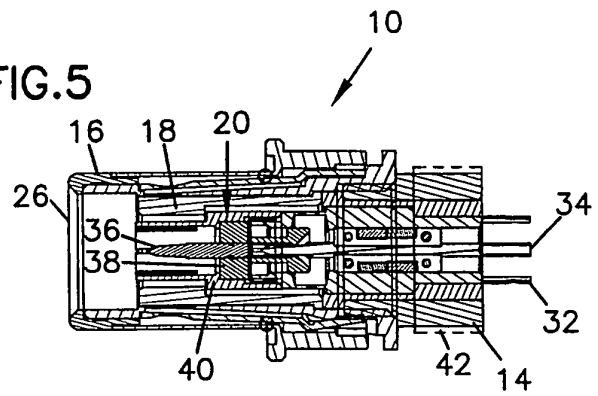


FIG.6

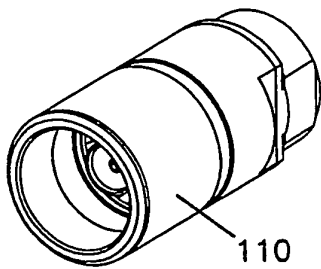


FIG.7

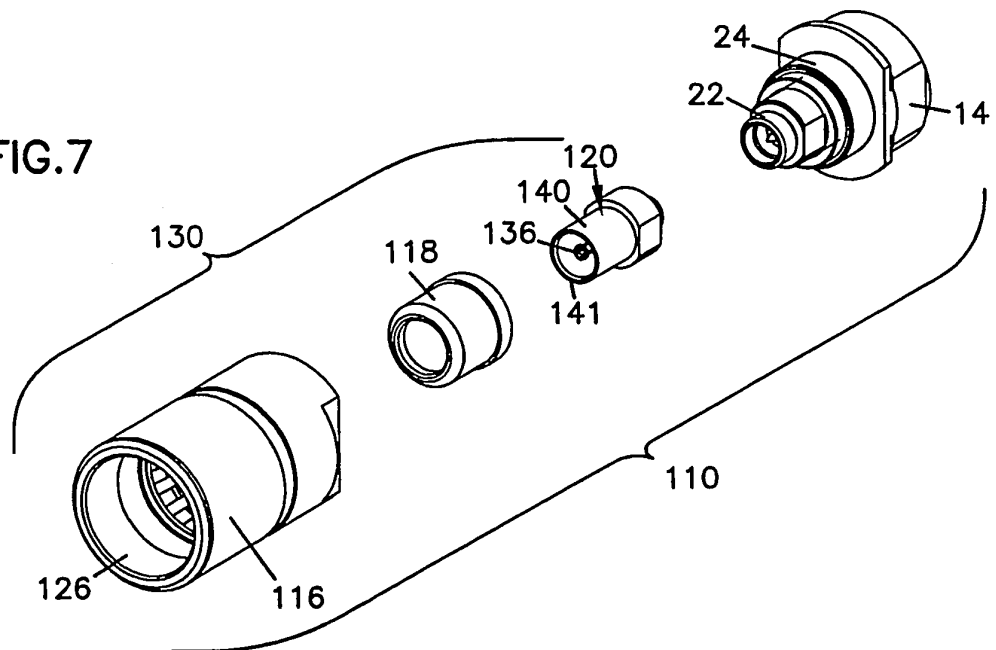


FIG.8

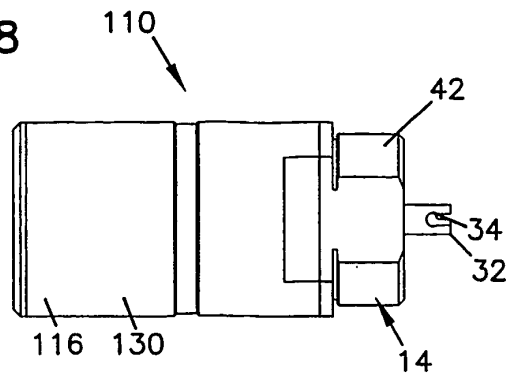


FIG.9

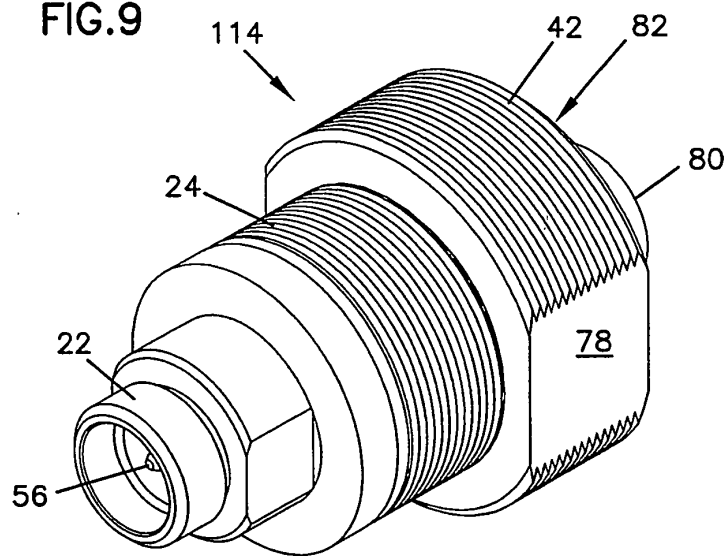


FIG.10

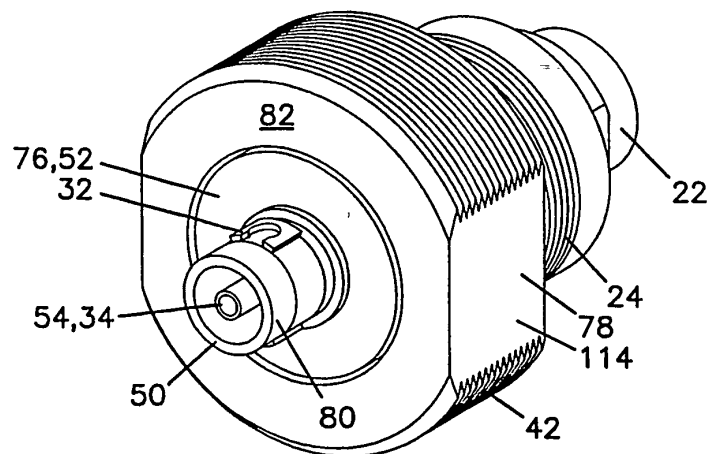


FIG.11

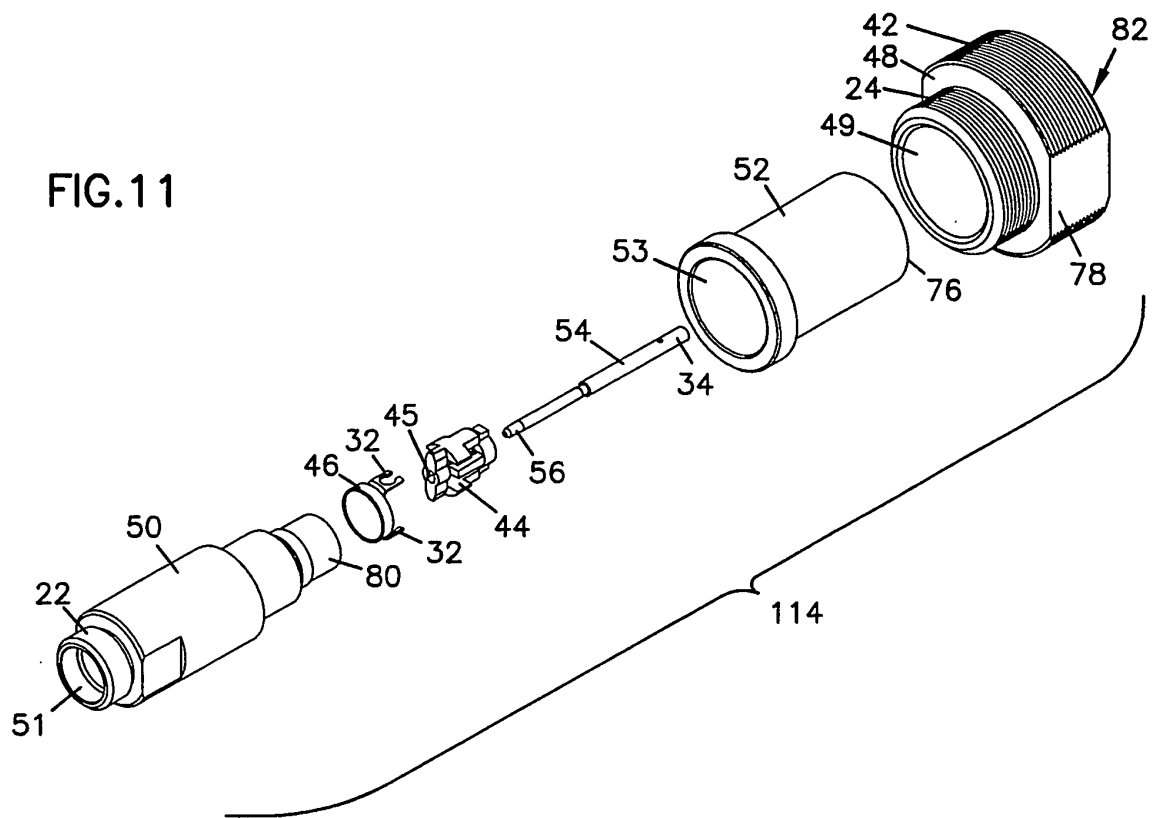


FIG.12

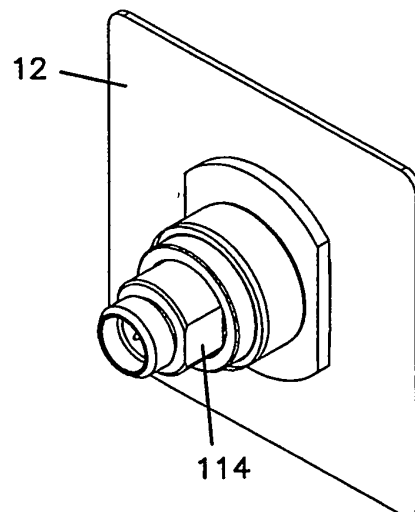


FIG.13

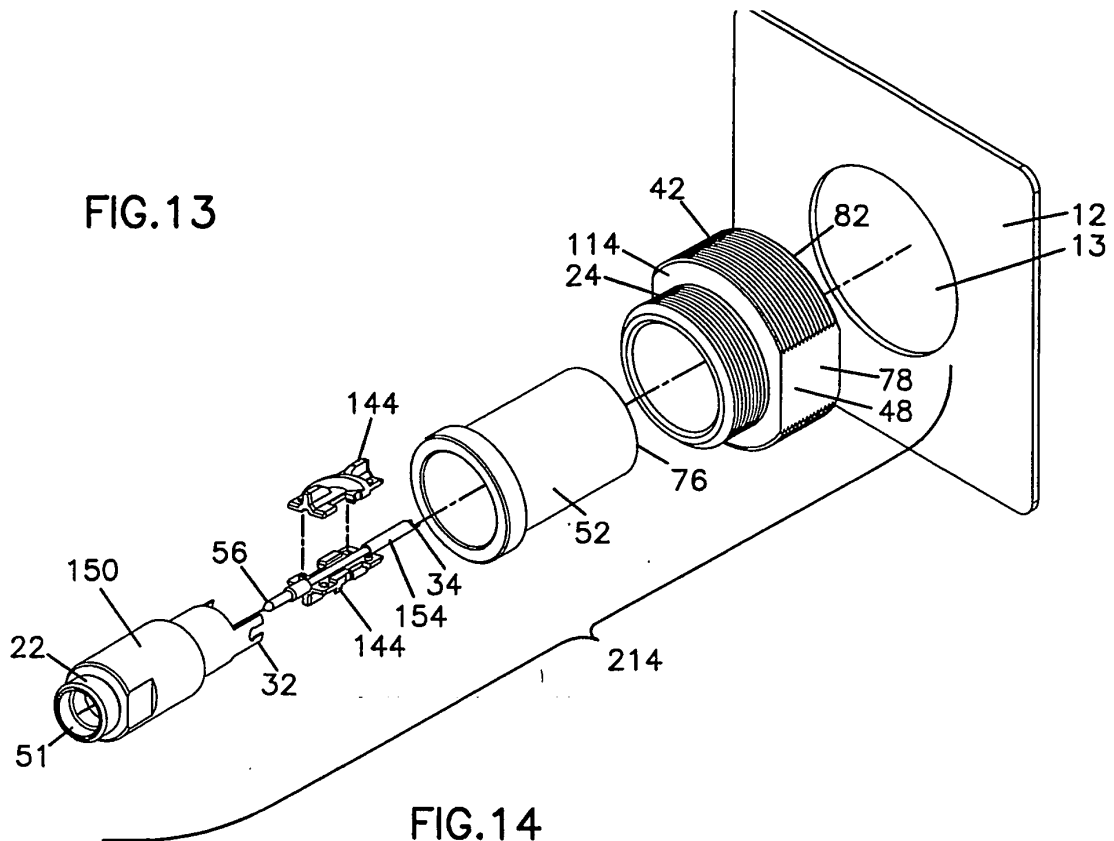


FIG.14

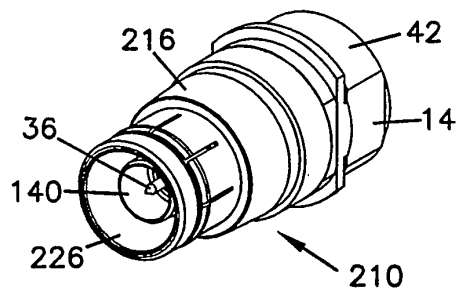
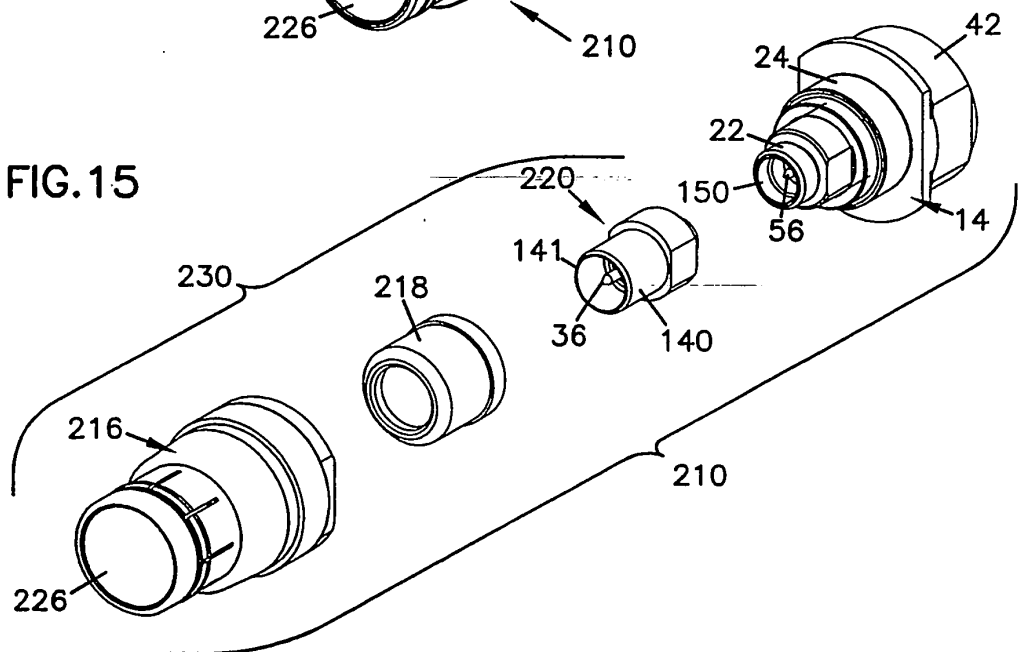


FIG.15



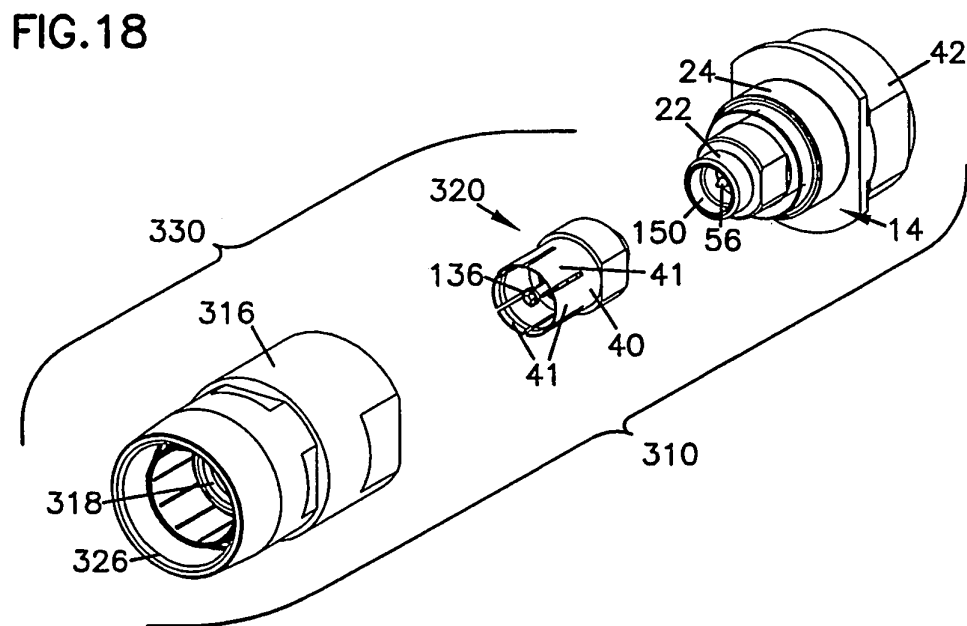
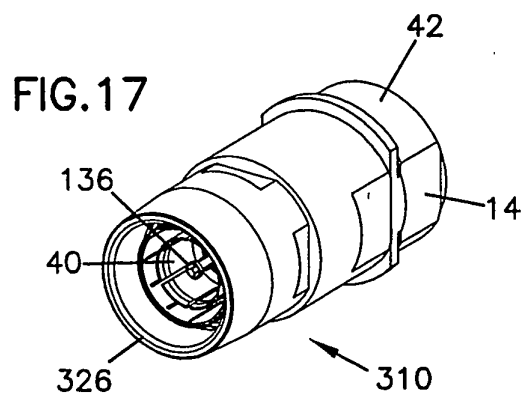
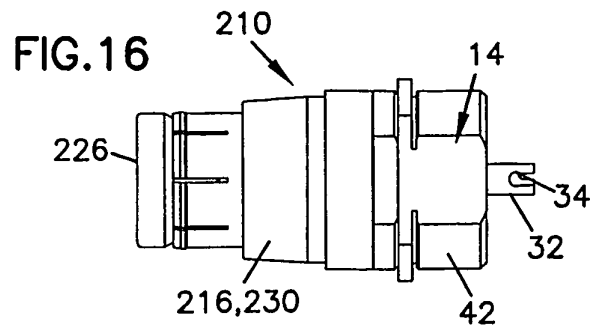


FIG.19

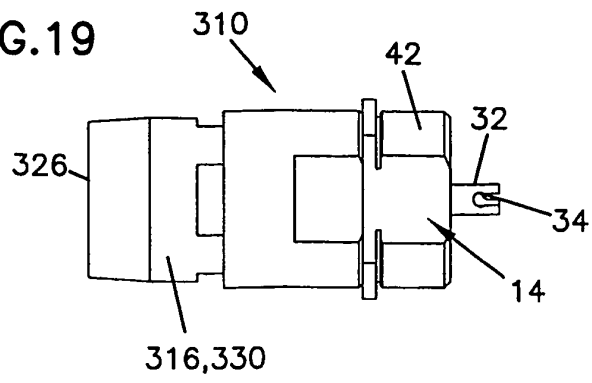


FIG.20

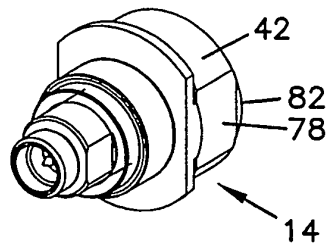


FIG.21

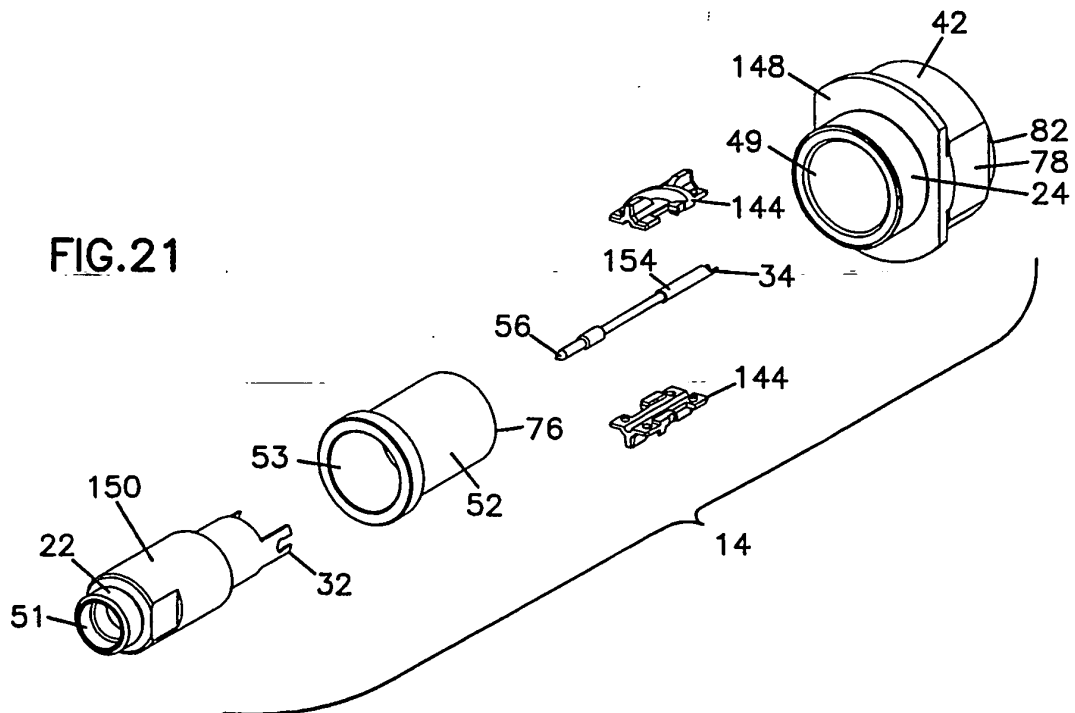


FIG.22

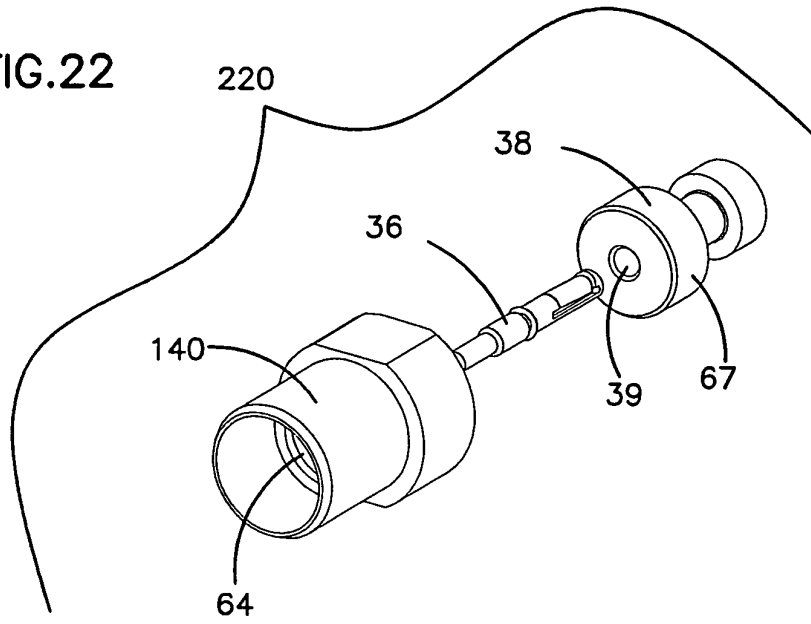


FIG.23

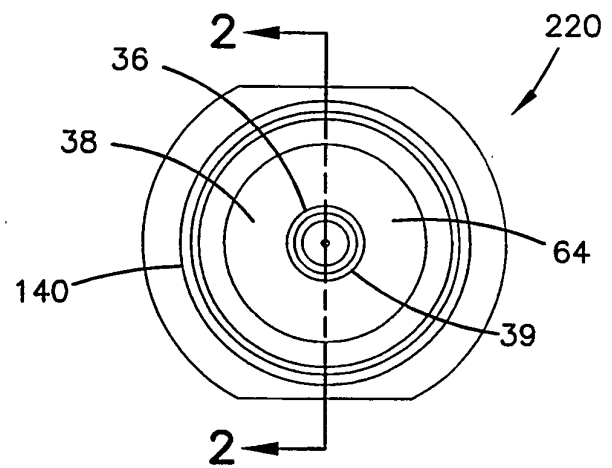
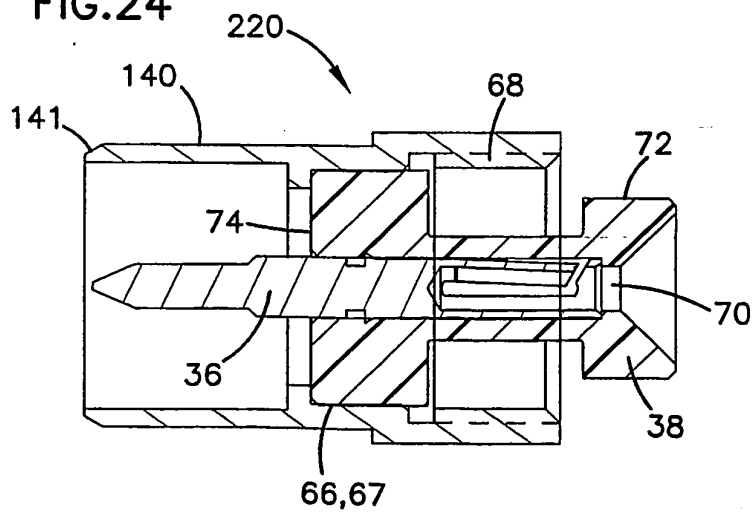


FIG.24



REFERENCES CITED IN THE DESCRIPTION

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